

CLAIMS

1. A tubing device for transporting fluids
comprising:

5 a support member, said support member comprising:

a curvilinear channel formed therein for
receiving a tube; and

an adhesive disposed in said channel for securing
a tubing into the channel.

10 2. The tubing device according to claim 1, further
comprising a flexible tube, said flexible tube being
disposed in said channel of said support member.

15 3. The tubing device according to claim 2, wherein
said support member comprises an aperture for hanging said
tubing device.

20 4. The tubing device according to claim 2, wherein
said curvilinear channel comprises at least one of: a "U"
bend, a right angle bend and a straight section.

5. The tubing device according to claim 2, wherein the interior of said tubing is free of adhesives.

6. The tubing device according to claim 2, wherein
5 said channel has a substantially semi-circular cross section.

7. The tubing device according to claim 2, wherein
said channel has a cross section which comprises an arc
10 which is greater than a semi-circle.

8. The tubing device according to claim 7, wherein
said tubing is held in said channel of said support device
by the greater than semi-circular cross section of said
15 channel.

9. The tubing device according to claim 8, wherein
said channel comprises an opening to allow a tube to be
inserted into said channel, and said opening is less than
20 the outer diameter of said tubing.

10. The tubing device according to claim 2, wherein the outer diameter of said tubing is substantially equal to the inner diameter of said channel.

5 11. The tubing device according to claim 2, wherein said channel comprises a "U"-bend, and the legs of said U-bend are oriented substantially perpendicular to the direction the tubing device is designed to hang, to prevent the gravitational forces acting on the device deforming the
10 "U"-shape into a "V"-shape.

12. The tubing device according to claim 1, wherein said curvilinear channel is a first curvilinear channel, and said support member comprises a second curvilinear
15 channel, said second curvilinear channel being disposed adjacent to said first curvilinear channel and within said support member.

13. The tubing device according to claim 12, wherein
20 said second curvilinear channel has a diameter less than the cross section of said first curvilinear channel.

14. The tubing device according to claim 13,
comprising first and second pieces of flexible tubing, said
first piece of flexible tubing being disposed in said first
curvilinear channel, and said second piece of curvilinear
5 tubing being disposed in said second curvilinear channel.

15. A tubing device for use in the medical industry,
said tubing device comprising:

10 a tube support comprising a curvilinear channel
disposed therein for receiving a piece of tubing; and
means for holding a piece of tubing in said
channel.

16. The tubing device according to claim 15, wherein
15 said means for holding comprises adhesive.

17. The tubing device according to claim 15, wherein
said channel has a semi-circular cross-section.

20 18. The tubing device according to claim 15, wherein
said channel has a cross-section with a greater than semi-
circular cross-section.

19. The tubing device according to claim 18, wherein said means for holding comprises said greater than semi-circular cross-section.

5

20. The tubing device according to claim 15, wherein said support device comprises:

a first portion and a second portion; and

said first and second portions being connected by a

10 hinge.

21. The tubing device according to claim 20, wherein each of said first portion and said second portion of said tubing device comprises a channel.

15

22. The tubing device according to claim 21, wherein said channel in said first portion and said channel in said second portion are configured to align with each other to hold a piece of tubing between them.

20

23. The tubing device according to claim 22, wherein said channel in said first portion and said channel in said

second portion are configured to form a cylindrical channel when aligned.

24. The tubing device according to claim 23, wherein
5 said channel in said first portion and said channel in said second portion each has a semi-circular cross section.

25. The tubing device according to claim 23, wherein
10 said channel in said first portion has a greater than semi-circular cross section, and said channel in said second section has a less than semi-circular cross-section.

26. The tubing device according to claim 15, wherein
15 said curvilinear channel is a first curvilinear channel, and said support member comprises a second curvilinear channel, said second curvilinear channel being disposed adjacent to said first curvilinear channel and within said support member.

20 27. The tubing device according to claim 26, wherein said second curvilinear channel has a diameter less than the cross section of said first curvilinear channel.

28. The tubing device according to claim 27,
comprising first and second pieces of flexible tubing, said
first piece of flexible tubing being disposed in said first
5 curvilinear channel, and said second piece of curvilinear
tubing being disposed in said second curvilinear channel.

29. The tubing device according to claim 27, wherein
the outer periphery of said first channel overlaps the
10 outer periphery of said second channel.

30. The tubing device according to claim 27, wherein
said support device comprises a barrier between said first
and second channels, said barrier comprising a slot to
15 allow communication between said first and second channels.

31. The tubing device according to claim 15, wherein
said support member comprises an additional curvilinear
channel, said additional curvilinear channel being disposed
20 on an opposing face of said support member from said first
curvilinear channel.

32. The tubing device according to claim 15, wherein said support member comprises an aperture for hanging said tubing device.

5 33. The tubing device according to claim 15, wherein said support device comprises opposing faces and a circumferential edge, and said curvilinear channel comprises a trough disposed along at least a portion of said circumferential edge.

10 34. The tubing device according to claim 15, wherein said support device comprises apertures to reduce the weight of said support device.

15 35. A tubing device for transporting a biological fluid, said tubing device comprising:

a tube support comprising a curvilinear channel disposed therein for receiving a piece of tubing; and structure to hold a piece of flexible tubing in
20 said channel.

36. The tubing device according to claim 25, further comprising a piece of flexible tubing disposed in said channel.

5 37. A method for transporting a fluid for a medical application, said method comprising:

providing a piece of flexible tubing, the tubing comprising a single piece and having no adhesives on the interior surfaces;

10 providing a support device for the flexible tubing, the support device being configured to prevent flow constricting areas from forming in the flexible tubing; and transporting a fluid through the flexible tubing.

15 38. A kink-resistant tubing apparatus comprising a support structure, said support structure being configured to substantially prevent kinking in a weight bearing flexible tube disposed within said support structure.

20 39. A kink-resistant tubing apparatus comprising a support structure, said support structure being configured to substantially prevent kinking in a weight bearing

flexible tube disposed within said support structure, and said support structure being configured so that said flexible tubing is adjustable within said support structure.

5

40. A kink-resistant tubing apparatus comprising a support structure, said support structure being configured to be weight bearing to substantially prevent kinking in a flexible tube disposed within said support structure when weight is applied to said flexible tube.

10

41. A kink-resistant tubing apparatus comprising a support structure, said support structure being configured to substantially prevent kinking in a flexible tube disposed within said support structure when weight is applied to said flexible tube, and said support structure being configured so that said flexible tubing is adjustable within said support structure.

15

42. A kink-resistant tubing apparatus which is weight bearing.

20

43. An adjustable kink-resistant tubing apparatus which is weight bearing.

44. A biological fluid filtration system comprising:

5 a blood container;

a leukocyte depletion device, said leukocyte depletion device having an inlet and an outlet with a filter media disposed therebetween, said leukocyte depletion device being disposed downstream from said blood container;

10 a first conduit, said blood container and said inlet of said leukocyte depletion device being in fluid communication through said first conduit;

a blood-receiving container, said blood receiving container being disposed downstream of said leukocyte

15 depletion device;

a second conduit, said outlet of said leukocyte depletion device being in fluid communication with said blood receiving bag through said second conduit;

a bypass line, said bypass line providing fluid
20 communication between said blood container and said blood receiving container;

said bypass line comprising a loop, said loop of

said bypass line being configured to be disposed above said blood container at a sufficient height to prevent the passage of fluid around the leukocyte depletion device; and

5 a tube support device, said loop of said bypass line being disposed in said tube support device, and said tube support device being configured to support substantially the entire weight of said biological fluid filtration system without substantially crimping said bypass line.

10 45. The biological fluid filtration system according to claim 44, wherein said bypass line connects to the top of said blood bag.

15 46. The biological fluid filtration system according to claim 44, wherein said bypass line connects to the bottom of said blood bag.

20 47. The biological fluid filtration system according to claim 44, wherein said tube support device comprises:

a tube support comprising a curvilinear channel disposed therein for receiving a piece of tubing; and

means for holding a piece of tubing in said channel.

48. The biological fluid filtration system according to claim 44, wherein said tube support device comprises:

a tube support comprising a curvilinear channel disposed therein for receiving a piece of tubing; and structure to hold a piece of flexible tubing in said channel.

49. A kink resistant tubing apparatus comprising a support member, said support member comprising:

at least two channels through said support member for retaining tubing; and

structure to support the weight of said tubing apparatus without substantially deforming tubing retained by said support member.

50. The kink resistant tubing apparatus according to claim 49, wherein said at least two channels are substantially parallel to each other.

51. The kink resistant tubing apparatus according to claim 50, wherein said support member is substantially rectangular.

5 52. The kink resistant tubing apparatus according to claim 51, wherein said structure to support the weight of said tubing apparatus comprises a hole through said support member.

10 53. The kink resistant tubing apparatus according to claim 51, wherein said hole through said support structure is substantially perpendicular to said at least two channels.

15 54. The kink resistant tubing apparatus according to claim 50, wherein said support member comprises a curved portion between said at least two channels.

20 55. The kink resistant tubing apparatus according to claim 54, wherein said structure to support the weight of said tubing apparatus comprises said curved portion of said support member.

56. The kink resistant tubing apparatus according to claim 49, wherein said support member is configured to prevent deformation of tubing held by said support member upon the weight of said tubing apparatus being supported by said support member.

57. The kink resistant tubing apparatus according to claim 49, wherein said support member is flexible.

58. The kink resistant tubing apparatus according to claim 49, wherein said support member is substantially rigid.